

John J. Wurdack

SANDEMANIA GLANDULOSA Wurdack, sp. nov.

A *S. lilacina* Gleason differt pubescentia ramorum foliorum hypanthiorumque glandulifera, foliis supra pubescentibus, forma connectivi antherarum maiorum.

Frutex 1 m. Rami obtuse 4-angulati persistenter modice laxaque glanduloso-strigosi. Petioli 7-10 mm. longi; lamina 45-65 x 15-25 mm. elliptica apice acuta basi late acuta 5-nervata, supra modice laxaque glanduloso-strigosa (pilis subtilibus $3/\text{mm.}^2$ 0.3-0.8 mm. longis) praecipue inter nervos nervis primariis impressis secundariis obscuris, subtus sparse glanduloso-hirsutula praecipue ad nervos nervulose, ad paginam minute denseque tomentosa nervis secundariis reticulatis leviter elevatis. Inflorescentia bractese bracteolae pedicelli hypanthiumque ut in *S. lilacina* sed glanduloso-hirsutuli. Sepala 1.1-1.2 mm. longa lanceolata apice seta glandulosa armata. Petala 3 x 1.1 mm. rosea oblonga acuta eciliata apice seta armata. Filamenta 3.8 vel 3.6 mm. glabra vel raro 1-2 per florem sparse glanduloso-hirsutula. Stamina maiora: loculi 2.7 mm. longi parte 1.1 mm. super connectivum anguste rostrata, connectivo basi 1 mm. producto bilobo sed non U-formi. Stamina minora: loculi 2.2 mm. longi parte rostrata 0.7 mm. longa, connectivo basi 0.4 mm. producto breviter bilobo. Stylus gracilis 6.5 x 0.2 mm. Ovarium glabrum biloculare.

Holotype: R. L. Froes 22658 (NY), collected in dry sandy soil in open caatinga at Sao Pedro, Rio Pedauiry, Edo. Amazonas, Brazil, Oct. 27, 1947.

In *S. lilacina*, the pubescence is eglandular, the leaves are glabrous above, and the connectives of the large anthers are at the base hoof-shaped (rather than bilobed); also the anther rostrum is relatively shorter.

S. glandulosa is the second-known species of the genus; *S. lilacina* was collected in Dept. San Martin, Peru, about 1600 km. from the type locality for *S. glandulosa*. The relationship of *Sandemania* with *Macairea* is marked, the diminutive petals and stamens and the glabrous ovaries of the former being the outstanding differences. Three species of *Macairea* (*M. calvescens* Naud., *M. multinervia* Benth., and *M. lanata* Gleason) have eglandular filaments; the

sporadic appearance of glandular hairs on one or two filaments of a few flowers in S. glandulosa occurs also in M. lanata. The gap between the obtuse to rounded petals of Macairea and the acute ones of Sandermania is slight.

TIBOUCHINA MOLLIS (BONPL.) COGN. var. GLANDULIFERA
Wurdack, var. nov.

Pedicellorum hypanthiorumque trichomata glandulifera.

Holotype: R. E. Schultes & Mardoqueo Villareal 7978 (NY), collected on Volcan El Galeras, Pasto, Dept. Narino, Colombia, elev. 3200-3500 m., June 4, 1946. Paratypes: Schultes & Villareal 7900 (NY), between Santa Rosa and Tuquerres, Narino, elev. 2750-2850 m., June 2, 1946; Reinaldo Espinosa 2757 (NY), Hacienda Obonuco, Pasto, Narino, elev. 2550 m., Mar. 28, 1950; R. A. Toro 884 (NY), Boqueron, vicinity of Medellin (?), Dept. Antioquia, Jan. 5, 1928.

This variety is of interest since glandular pubescence is characteristic of several related species (T. adenophora Cogn., T. rhynchantherifolia Cogn.). I have seen no material of T. mollis from south of Prov. Tungurahua, Ecuador; probably the cited and geographically authentic material from Peru (Weberbauer 5642) and Bolivia (Bridges s.n.) are referable to related species.

TIBOUCHINA LANCIFOLIA Wurdack, sp. nov.

Sect. Diotantha. T. incaro Gleason affinis, sed cum foliis angustioribus subtus vix strigulosis. A T. capitata (Naud.) Cogn. differt foliis angustioribus plinervis supra densiore strigosis, calycis lobis grandioribus.

Frutex 0.7 m. ramis imprimis brevissime sparseque strigulosis demum glabratis teretiusculis vel superne leviter compressis. Petioli 5-7 mm. longi; lamina 75-85 x 15-18 mm. breviter 7-plinervis (nervis exterioribus marginalibus dilutis) lanceolata apice anguste acuta basi acuta marginibus subtiliter serrulatis, supra modice subtiliterque strigulosa setis 2-3/mm.² et 1-1.5 mm. longis, subtus venis venulisque sparse strigulosis alioqui glabra. Inflorescentia paniculata pedunculis pedicellisque setulis patulis glandulosis sparse armatis. Pedicelli 3-5 mm. longi; gemmae bracteis duobus caducis basi hypanthi insertis investae; bracteeae 4.5 x 4.5 mm. ovato-orbiculares apice obtusae vel rotundatae intus glabrae extus modice glanduloso-hirsutae. Flores 5-meri. Hypanthium 3.5 mm. diametro 3.4-3.6 mm. altum (ad torum) modice (3/mm.²) glanduloso-

hirsutum; sepala 3-3.5 x 1.5-2 mm. triangularia ciliolata extus basin versus sparse glanduloso-hirsutula. Petala valde caduca non visa. Stamina glabra paulo inaequalia, maiora filamentis 5.5-6 mm. longis thecis 4.2-4.5 mm. longis connectivo sub loculis 1.6-1.8 mm. producto, minora filamentis 4.5-4.8 mm. longis thecis 3.6-3.7 mm. longis connectivo 0.9-1.2 mm. producto. Stylus 10 x 0.5 mm. glaber. Ovarium 5-loculare 5 mm. longum apicem versus glanduloso-strigulosum lobis apicalibus 1-1.5 mm. super loculos.

Holotype: W. M. A. Brooke 6767 (NY), collected at Incachaca about 130 km. northeast of Cochabamba, Dept. Cochabamba, Bolivia, elev. 1500 m., Aug. 20, 1950.

Other close relatives of T. lancifolia are T. stenophylla Cogn. (with shorter calyx lobes and smaller trinerved leaves having a more sparsely and coarsely strigose upper surface) and T. stenopetala Cogn. (with shorter calyx lobes, smaller basally inserted pedicellar bracteoles, and relatively broader 5-nerved leaves having sparser upper surface pubescence). It should be noted that the flowers of T. incarum are predominantly 5-merous and only exceptionally 6-merous.

TIBOUCHINA ALPESTRIS COGN. & T. BRACHYPHYLLA GLEASON

The types of both species came from the same locality, Comarapa, Bolivia. Two Bolivian collections from Incachaca (W. M. A. Brooke 6654 and Steinbach 5749) are certainly the same as T. brachyphylla (with somewhat more persistent cauline pubescence) and the difference in leaf size from the description of T. alpestris is bridged; the type of T. brachyphylla has no mature leaves.

TIBOUCHINA REPENS Wurdack, sp. nov.

T. pentameræ (Ule) Macbr. affinis sed repens cum foliis latioribus 5-nervatis.

rami lignosi graciles repentes ad nodos radicales. Petioli 3-6 mm. longi; lamina 23-30 x 15-21 mm. ovata apice acuta basi late obtusa 5-nervis nervis lateralibus ad 1-1.5 mm. coalitis marginibus creberrime serrulatis (dentibus 2/mm. 0.1-0.2 mm. profundis), supra modice subtili-strigulosa setis 5/mm.², subtus ad nervos nervulosque dense subtili-strigulosa alioqui modice laxo-subtili-strigulosa setis 5/mm.². Flores solitarii terminales 5-meri; pedicelli ebracteolati 2 mm. longi. Hypanthium (ad torum) 3 mm. longum modice (10/mm.²) subtili-longo-strigulosa; sepala 4.5 x 2 mm. triangulari-acuminata acumine ca. 2 mm. longo. Petala 8.8 x 5.6 mm.

obovata obtusa parce ciliata ciliis eglandulosis. Filamenta 3.2-3.5 mm. longa; antherae isomorphae thecis 2.7-3 mm. longis connectivo 0.7 mm. prolongo appendice hebeti bilobulata. Stylus 3.7 x 0.4 mm.; stigma punctiforme; ovarium glabrum 2.6 mm. altum 5-loculare.

Holotype: H. A. Allard 22082 (USNH 2025347) (US), collected at Boqueron Pass 92 km. from Tingo Maria on highway to Pucallpa, Dept. San Martin, Peru, elev. 400 m., Dec. 16, 1949-Jan. 5, 1950. "Trailing on bank. Fl. white."

T. pentamera has narrower acuminate 3-nerved leaves. Both T. pentamera and T. repens have glabrous ovaries, a character which would place them in Comolia, but the facies and pubescence of both are not at all that of Comolia. Buchtien 5506 from Hacienda Simaco near Tipuani, Bolivia, seems to be T. pentamera.

TIBOUCHINA STRICTA Wurdack, sp. nov.

Sect. Purpurella. A speciebus 184-187 Monographiae Melastomacearum Cogniauxii differt caulis 4-alatis hypanthio glabro.

Frutex 1 m. Rami stricti 4-angulati anguste 4-alati ad nodos setulosi alioqui glabri vel sparsissime (praecipue ad angulos) strigulosi. Petioli 20-30 mm. longi sparse strigulosi; lamina coriacea 60-75 x 30-35 mm. ovato-elliptica apice acuta basi late obtusa 5-nervis nervis lateralibus ad 3-5 mm. coalitis, supra sparse strigosa setis crassis 1/1-3 mm.² 1-1.5 x 0.3-0.4 mm., subtus in nervis primariis modice strigosa in nervis secundariis marginibusque sparse strigulosa alioqui glabra. Flores 5-meri compacto-paniculata pedunculis 4-angulatis glabris. Pedicelli 25-35 mm. longi glabri in medio bibracteolati bracteolis 10-15 x 4-5 mm. ellipticis acutis ciliatis glabris. Hypanthium 5-6 mm. longum latumque semiglobosum glabrum; sepala 5-5.4 x 4.5-5.6 mm. deltoidea acuta ciliata glabra. Petala 17-21 x 15-21 mm. rhomboideo-obovata apice late obtusa vel rotundata purpurea glanduloso-ciliata glabra. Filamenta 4.5-5 x 1.5-1.7 mm. complanata; thecae 3.4-3.7 mm. longae lato-porosae poro 0.8 mm. diam.; connectivum infra thecas 1.3-1.7 mm. productum breviter bilobum ad basin loborum 2 mm. latum. Stylus 16 mm. longus apice leviter clavatus; ovarium 6 x 4 mm. 5-loculare apice dense setosum.

Holotype: J. Cuatrecasas 18923 (NY), collected in "cabaceras del río Palo, quebrada del río Lopez: Quebrada del Duende", Dept. Cauca, Colombia, elev. 3400-3450 m., Dec. 2, 1944. Paratype: F. C. Lehmann

6038 (F), collected on the eastern slopes of Paramo de Guanacas, Dept. Cauca, Colombia, elev. 2300-2600 m.

Cogniaux suggested (on the Berlin Herbarium specimen of the Lehmann collection) the specific epithet here used. The closest relatives are T. grossa (L.f.) Cogn. and T. reticulata (Bonpl.) Cogn., both with pubescent petals and much larger connective prolongation. The same area in Colombia has also yielded Brachyotum lymphatum Wurdack, from the same two collectors only.

MICONIA HETEROTRICHA Wurdack, sp. nov.

Sect. Eumiconia. M. decipienti Cogn. affinis sed cum foliis supra pubescentibus subtus parcius furfuraceis floribus grandioribus.

Frutex; rami rotunde 4-angulati primum dense brunneo-stellato-furfuracei demum glabrescenti. Petioli 5-10 mm. longi dense furfuracei, usque ad basin cum alis laminarum decurrentibus; lamina coriacea 12-18 x 6-8.5 cm. oblongo-ovata apice satis (0.5-1.5 cm.) acuminata basi rotundata in petiolo decurrentia margine inconspicue ciliolato-denticulata denticulis 1/2-3 mm. vix 0.5 mm. profundis ciliolis mox deciduis breviter 5-plinervis (nervis tenuibus marginalibus exceptis) nervis secundariis prominentibus supra impressis subtus elevatis, supra sparse puberula pilis laxis 2-3/mm.² 0.5-1 mm. longis (demum deciduis?), subtus sparse irregulariterque stellato-furfuracea praecipue ad nervos et sparsissime (1/2-4 mm.²) laxo-pilosa. Inflorescentia paniculata ad apices ramulorum brevium cum floribus conferto-secundis dense stellato-furfuraceum; flores 5-meri sessiles bracteolati bracteolis triangularibus 1-1.3 x 0.8-1 mm. acutis. Hypanthium oblongum 3.4-3.5 (ad torum) x 2-2.2 mm. irregulariter stellato-furfuraceum; tubus calycis 0.5 mm. longus dentibus interioribus remotis deltoideis 0.2 mm. longis exterioribus quam interioribus 0.2 mm. longioribus subulatis seta breva praefixis. Petala 3 x 2.2 mm. oblongo-obovata haud profunde retusa dense papillosa. Filamenta 3.5 mm. longa; antherae 2.8-3.5 mm. longae anguste oblongae uniporosae connectivo basi postice 0.6-0.8 mm. prolongo lobis duobus obtusis rectis vel leviter extrinsecus recurvis. Stylus 5.5 x 0.5 mm. basin versus sparsissime stellato-furfuraceus; stigma aliquid expansum 0.9 mm. latum; ovarium 4-loculare loculo singulo 25-30-ovulato 2.3 mm. altum apice in collo tenui 0.5 mm. alto stellulato-coronato prolongo parte inferiori 1.8 mm. alta.

Holotype: C. Sandeman 6042 (K), collected at Bucaramanga (road to Cucuta), Dept. Santander, Colombia, elev. 8000 ft., May 1948; "v. floriferous shrub in full exposure. Dark green slightly glossy leaves with russet reverse. Cream-coloured flowers."

Gleason has synonymized M. nigricalyx Gleason under M. decipiens Cogn. The petals of M. decipiens are not papillose, the larger stamen connectives are of slightly different shape, and the hypanthium is only 1.5-2 mm. long with even, persistent, stellate pubescence; the lower leaf surface is persistently and densely furfuraceous and the upper surface glabrous. M. chamissois Naud. suggests M. heterotricha in inflorescence form and leaf texture and shape, but differs greatly in pubescence and floral details.

MICONIA POZOENSIS Wurdack, sp. nov.

Sect. Eumiconia Glomeratiflorae. M. biglomeratae (Bonpl.) DC., M. campestri (Benth.) Tr., M. rhytidophyllae Naud., M. trichophorae Gleason affinis sed cum foliis obtusis valide bullatis floribus 6-meris.

Rami teretes primum dense brunneo-stellato-furfuracei demum fusci glabrati. Petioli 9-14 mm. longi pubescentia cum ea ramorum eadem; lamina 40-55 x 25-42 mm. ovata vel oblongo-ovata apice obtusa basi leviter (2-5 mm.) cordata 7-nervis (in foliis grandioribus cum duobus additiis tenuissimis marginalibus) margine denticulata denticulis 1/mm. 0.5 mm. profundis, supra valide bullato-pustulata bullis 1/mm.² cum setis crassis 0.1-0.5 mm. longis praefixis pilis stellatis plusminusve persistentibus intermixtis, subtus foveolata dense griseo-stellato-tomentulosa ramis pilorum gracilibus 0.2-0.4 mm. longis. Inflorescentia paniculata ramulis glomerulos interrupto-spicatos gerentibus glomerulis 1-5 mm. longis pedunculatis. Flores 6-meri sessiles bracteolati bracteolis lanceolatis 2-5 x 0.3-0.8 mm. dense stellato-furfuraceis. Hypanthium campanulatum 2.1-2.3 x 2 mm. appresso-stellato-tomentulosum pilis simplicibus (rarissime glanduliferis) laevibus patulis sparse intermixtis; tubus calycis 0.7-0.8 mm. ultra torum dentibus interioribus 0.6-0.9 mm. longis triangularibus exterioribus subulatis cum interioribus sequentibus vel vix brevioribus. Petala 4.7-5 x 2.5-2.7 mm. asymmetrico obovata vel oblongo-obovata glabra. Stamina isomorpha; filamenta 4 mm. longa; antherae 3 mm. longae lanceolatae, connectivo basi antice exappendiculato postice pro 0.5-0.7 mm. leviter incrassato. Stylus 7 x 0.5 mm.; stigma truncatum non dilatatum; ovarium glabrum 4-loculare apice conicum in collo 0.5 mm. alto protractum.

Holotype: C. Sandeman 6114 (K), collected below the Paramo Pozo Alto, Ocana, Dept. "Santander" (del Norte?), Colombia, elev. 8000 ft., June 1948. "Shrub 3-4 ft. high, white flowers, very floriferous. Full exposure."

The closest relative of M. pozoensis is M. campestris which has a puberulent 5-celled ovary and glandular branchlet hairs intermingled with the stellate ones. The New York sheet of Schomburgk 961 (the number cited by Cogniaux as M. biglomerata) has a tomentulose ovary apex; Gleason's notes on two Kew sheets indicate that this number may be a mixed collection since Cogniaux described the ovary of M. biglomerata as glabrous.

Miconia Series Glomeratiflorae shows a strong relationship with Heterotrichum, having the same general pubescence, sepals, and anthers. The ovarial collar is variously developed in the various species; this group may well be one of the natural divergence points for Heterotrichum. Gleason has discussed, in connection with H. rostratum (Naud.) Gleason and H. polyandrum (Benth.) Gleason, the relationship between Heterotrichum and Miconia Sect. Octomeris.

MICONIA LUTESCENS (BONPL.) DC. ssp. PIURENSIS Wurdack, ssp. nov.

Folia minus dentata; dentes exteriores calycis vix prominentes non ultra dentes interiores prominentes; hypanthium paulum grandius.

Holotype: C. Ochoa 1753 (NY), collected in the Montana de Cuyas, Ayabaca, Dept. Piura, Peru, elev. 2200 m. Paratype: Ochoa 1790 (NY), from the same locality.

In typical M. lutescens the leaf margin sinuses are 0.5-0.7 mm. deep between teeth; the exterior calyx teeth are 1 mm. long, projecting beyond the calyx lobes 0.7 mm.; and the hypanthium is about 2 mm. high to the torus. In ssp. piurensis the sinuses are 0.2-0.3 mm. deep; the exterior calyx teeth are 0.5 mm. long, being exceeded slightly by the interior teeth; and the hypanthium is about 2.5 mm. long to the torus. It should be noted that the ovary of both subspecies is 4-locular, not 3-locular as stated by Naudin. Also the style is basally inconspicuously flexuous-puberulent, as is the ovary apex. The type locality for ssp. lutescens is Saraguru, just west of Loja and only 60 km. north of Ayabaca.

MICONIA SANDEMANII Wurdack, sp. nov.

Sect. Cremanium. M. pallidae Gleason, M. biacutae Cogn. et M. nerifoliae Tr. affinis sed cum

dentibus exterioribus calycinis eminentibus et forma pubescentiaque foliorum differt.

Rami teretes dense fusco-furfuraceo-tomentulosi. Petioli 7-10 mm. longi dense furfuraceo-tomentulosi; lamina 40-50 x 10-15 mm. anguste oblongo-elliptica basi acuta apice anguste acuta marginibus anguste recurvatis integris trinervis nervis primariis supra impressis subtus prominenter elevatis nervis lateribus supra obscuris subtus anguste prominulenterque elevatis 1-1.5 mm. inter se distantibus, supra fusca primum furfuracea demum glabrata (radicibus pilorum ferrugineorum persistentibus a hyphis albidis fungorum infectis faciem "albido-punctulata" dantibus), subtus prorsus densissime persistenterque furfuraceo-tomentulosi tomento primum ferrugineo demum pallidior. Inflorescentia paniculata dense furfuraceo-tomentulosa; flores 5-meri sessiles aut brevissime (ad 1 mm.) pedicellati bracteolis pedicellorum linearibus 0.5-1 mm. longis caducis. Hypanthium 1.8-2 x 1.9 mm. campanulatum densissime ferrugineo-furfuraceum; tubus calycis 0.3-0.4 mm. ultra torum dentibus interioribus hyalinis 0.2 mm. altis late ovatis rotundis dentibus exterioribus 1-1.1 mm. longis (ultra torum) late subulatis dentes interiores 0.4-0.5 mm. superantibus. Petala 1.8 x 1.1 mm. oblonga retusa navicularia glabra. Filamenta 2.6-2.8 mm. longa; antherae 0.8-1 mm. longae oblique lateque 4-porose connectivo sub loculis dorsaliter breviter (0.3 mm.) bilobulato-prolongo aut recto-tuberculato ventraliter breviter (0.25-0.3 mm.) bilobulato. Stylus 3.3 x 0.25 mm.; stigma capitellatum 0.6 mm. latum; ovarium triloculare.

Holotype: C. Sandeman 5837 (K), collected at Villavicencio, Intend. Meta, Colombia, elev. 1600 ft., March 1948. "Tall shrub with cream-coloured flowers....semishade."

Both M. biacuta and M. nerifolia have squarish stems, larger leaves, less sharply prominulous lateral nerves on the lower leaf surface, and inconspicuous exterior calyx teeth not exceeding the inner teeth. M. pallida has relatively wider less sharply acute leaves with pubescence persistent only on the veins beneath, a sparsely furfuraceous hypanthium, and inconspicuous exterior calyx teeth. Perhaps the closest relative of M. sandemanii is an undescribed species of Dr. Gleason's (to be based on Cuatrecasas 20054 from Dept. El Valle, Colombia) which has a more granular lower leaf surface and hypanthial pubescence, larger flowers, deltoid nonprojecting external calyx teeth, and a relatively shorter style 0.6 mm. broad with a truncate non-dilated stigma.